

Hydrafoam PU

CEMKRETE

Polyurethane foam resin for stopping water flow into concrete walls and slabs leakage crack, honey comb and construction joints

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Description

Hydrafoam PU two part liquid polyurethane is mixed in the proportions supplied and injected into the cracks in concrete. It reacts with moving water to form a foam barrier.

Uses

Hydrafoam PU Injection is used for cracks in concrete to stop the flow of moving water. It will provide an effective system for crack sealing in wet conditions. It is a complete system for water cut off in concrete, masonry structures where strong leaks are encountered. The system only reacts when it comes into contact with water, providing semi-flexible polyurethane foam, thus providing permanent solution to the leaking problems.

Hydrafoam PU is an extremery thin liquid resin that react with Moisture when injected into the soil or sand forming a rockhard,water tight mass.

Hydrafoam PU is used to stabilize loose soil and sand

Advantages

- Reacts with water to produce water resistant foam to stop water ingress into the concretes and masonry structure,
- Rapid instant action to produce water stop against moving water under pressure
- Stop underground water flows
- Seal leaking sea walls.
- Tie back anchors.

Design criteria

Semi-Flexible polyurethane resin type is designed to stop the movement of water in cracked concrete. Crack widths of between 0.1 mm and 5 mm can be treated depending on water flow. **Hydrafoam PU** is designed as a solution to water ingress or movement in structures and must be used in conjunction with manufactures provided catalyst proportion to make homogenous grout for stopping the water flow, which becomes when contact with water form hydrophobic reaction and chemically resistant semi-flexible polyurethane foam. On certain injections it is advisable to give a second pass using varying the catalyst ratio from 5% to 10% to provide a flexible seal. The reaction time can be adjusted from 10 minutes to 30 seconds.

Specification clause

Water-stopping crack injection resin

The foam water-stopping crack injection resin shall be a two part foaming liquid polyurethane. When mixed in the proportions supplied and injected to cracks in concrete, the resin shall react with moving water to form a foam water-stopping barrier.

The water-stopping injection resin shall have the following properties ; pot life, in the absence of water, 6 – 8 hours at 20 °C, 3-4 hours at 30°C; reaction time with water, 5-30 seconds, dependent on temperature; viscosity of 3 – 5 poise, at 20; specific gravity of 1.14 ± 0.06 ; foam density of 0.025. When used in conjunction with Flexible polyurethane resin type, a flexible two part polyurethane injection resin shall form a permanent seal in cracked concrete.

Application instructions

Hydrafoam PU can be applied using either injection packers fixed into holes drilled directly into the crack or drilled diagonally from concrete adjacent to the crack or by the fixing of injection nipples bonded to two surface using Cemkrete E119. On wide cracks and where there is a large flow of water the use of Cemplug, rapid setting cement based, water-stopping mortar, should be considered for initial control of water.

Preparation

If water flow permits, clean the surface adjacent to the cracks and remove any dust, unsound or contaminated material, plaster, oil, paint, grease, corrosion deposits or algae.

The surface should preferably be prepared using high pressure water jetting or light abrasive blasting, followed by thorough washing to remove dust and remaining particles. Dirt alone may be removed with wire brushes or similar mechanical means.

Oil and grease deposits should be removed by steam cleaning, detergent scrubbing or the use of a proprietary degreaser. The effectiveness of decontamination should then be assessed by a pull-off test.

Blow the cracks and treated surface with oil free air to ensure complete removal of all dust and loose particles.

Fixing injection packers

The injection packers inserted into pre-drilled holes shall be fixed at intervals along the length of each crack.

The distance between each packer will depend upon the width and depth of the crack. Spacing shall be close enough to ensure that the resin will penetrate along the crack to the next pint of injection. This will normally be between 200 mm to 500 mm. (continued on next page...)

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Preparation (continues...)

Where practical the surface of the cracks between the packers shall be sealed with a band of Polymer mortar, 30 to 40 mm wide and 2 to 3 mm thick. Both sides of any cracks which go all the way through a wall or slab shall be sealed this way. Please not: Where water flow is severe the Polymer mortar application can be omitted.

In the case of a wall or slab which is cracked all the way through, packers shall be located on both sides with those at the back placed at midway points between those at the front.

Where application, the Polymer mortar shall be allowed to cure for 8 hours at 35 °C. At low ambient temperatures (5 °C to 12 °C) the curing time will be extended and the applicator shall ensure that the surface sealant has adequately cured prior to continuing.

One end of the injection hose shall be attached to the lowest packer on vertical cracks or to either end of horizontal cracks. Each crack shall be treated in a single, continuous operation. Sufficient material shall, therefore, be made ready prior to the commencement of the work.

Properties :

The following properties were obtained at a temperature of 20°C unless otherwise specified.

Test method	Typical results
Pot life in the absence of water:	6 – 8 hours @ 20°C 3 – 4 hours @ 30°C
Reaction time with water:	5 – 30 seconds Dependent on Temperature
Specific gravity :	1.14 ± 0.06
Density of foam :	0.025
Viscosity :	3 - 5 poise at 20°C

Technical support

Cemkrete offers a comprehensive range of high performance, high quality construction products. In addition, Cemkrete also offers a technical support to end-users and contractors.

Estimating

Supply

Hydrafoam PU : 21 Per Set

Storage

Shelf life

All products have a shelf life of 6 months at 20 °C if kept in a dry store in the original, unopened containers.

Storage conditions

Store in dry conditions in the original unopened containers. If stored at high temperatures and/or high humidity conditions the shelf life may be reduced to 2 to 3 months.

Restoring

Remove the packers or nipples. Apply any holes or voids with Cemkrete E119 or Cemkret GP and allow to cure. Do not allow to burn.

Cleaning

Hydrafoam PU and Polymer mortar should be removed from tools, equipment and mixers with solvent immediately after use. Hardened material can only be removed mechanically.

Precautions

Health and safety

Hydrafoam PU contains isocyanate which may cause sensitization by inhalation. During use avoid contact with skin and eyes and inhalation of vapour. Wear suitable protective clothing, gloves and eye/face protection.

Should accidental skin contact occur, remove immediately with a resin removing cream followed by soap and water. DO NOT use solvent. In case of contact with eyes, rinse immediately with plenty of clean water and seek medical advice. If swallowed seek medical attention immediately DO NOT induce vomiting. Use only in well ventilated areas. In cases of insufficient ventilation wear suitable respiratory protective clothing.

Important Note: Cemkrete warrants its materials free of manufacturing defects and produced as per standard specifications and sold under the terms and conditions of usages, whilst Cemkrete endeavors to ensure that any advice, recommendation, or information, given through its products literatures are reflects of the R&D in-house lab test and practical sites experience and knowledge based feed backs, however, the products are being used under various conditions and applied beyond its control where or how either directly or indirectly at various locations and places at a different stages that of an intended purposes and uses. Therefore, Cemkrete cannot hold warranty or responsible for resultant consequences, such as damages to the property or assets but the product itself.